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Attorney's Docket No.: 17023-002US1  
Client's Ref. No.: NS-50

**OFFICIAL COMMUNICATION FACSIMILE:**

**OFFICIAL FAX NO: (703) 872-9306 83402**

Number of pages including this page 31

Applicant : Michael A. Apicella et al.      Art Unit : 1645  
Serial No. : 09/077,572      Examiner : S. Devi  
Filed : June 1, 1998


Title : Non-Toxic Mutants of Pathogenic Gram-Negative Bacteria

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Attached to this facsimile communication cover sheet are Revocations and New Powers of Attorney, a copy of Notice of Recordation (Reel/Frame: 010083/0800), and a copy of Notice of Recordation (Reel/Frame: 010083/0818), a copy of Notice of Recordation (Reel/Frame: 010088/0026), and a copy of Notice of Recordation (Reel/Frame: 014677/0895), faxed this 9th day of June, 2004, to the United States Patent and Trademark Office.

Respectfully submitted,

Date: June 9, 2004

  
Ann S. Viksnins  
Reg. No. 37,748

PTO Customer Number: 26191  
Fish & Richardson P.C., P.A.  
60 South Sixth Street  
Suite 3300  
Minneapolis, MN 55402  
Telephone: (612) 335-5070  
Fax: (612) 288-9696

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Michael A. Apicella et al.      Art Unit : 1645  
Serial No. : 09/077,572      Examiner : S. Devi, Ph.D.  
Filed : June 1, 1998  
Title : NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

REVOCATION AND NEW POWER OF ATTORNEY

Under 37 CFR §3.73(b) UNIVERSITY OF IOWA RESEARCH FOUNDATION, a 501(c)(3) organization designated to manage intellectual property on behalf of the University of Iowa, THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a university, and WYETH HOLDINGS CORPORATION, a corporation, certify that they collectively are the assignees of 100% of the right, title and interest in the patent application identified above by virtue of: An assignment from the inventors of the patent application identified above.

A chain of title from the inventors of the patent application identified above, to the current assignee as shown below. Copies of the assignments or other documents in the chain of title are attached.

1. From Bradford W. Gibson to THE REGENTS OF THE UNIVERSITY OF CALIFORNIA. The document was recorded in the Patent and Trademark Office at Reel 010083, Frame 0800, a copy of which is attached.
2. From Michael A. Apicella, Melvin G. Sunshine, and Na-Gyong Lee to UNIVERSITY OF IOWA RESEARCH FOUNDATION. The document was recorded in the Patent and Trademark Office at Reel 010083, Frame 0818, a copy of which is attached.
3. From Rasappa Arumugham to AMERICAN CYANAMID COMPANY. The document was recorded in the Patent and Trademark Office at Reel 010088, Frame 0026, a copy of which is attached. On December 31, 2002, AMERICAN CYANAMID COMPANY

**Fax**  
CERTIFICATE OF MAILING BY ~~FIRST CLASS MAIL~~

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

June 9, 2004  
Date of Deposit

[Signature]  
Signature

[Signature]  
Typed or Printed Name of Person Signing Certificate

Applicant : Michael A. Apicella et al.  
Serial No. : 09/077,572  
Filed : June 1, 1998  
Page : 2 of 3

Attorney's Docket No.: 17023-002US1 / N5-50

changed its name to WYETH HOLDINGS CORPORATION. This name change was recorded in the Patent and Trademark Office at Reel 014677, Frame 0895, a copy of which is attached.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned, whose title is supplied below, is empowered to act on behalf of the assignee.

The undersigned, acting on behalf of the assignee, hereby revokes all powers of attorney previously granted in the application and appoints:

Ann S. Viksnins, Reg. No. 37,748; Mark S. Ellinger, Ph.D., Reg. No. 34,812; Dorothy P. Whelan, Reg. No. 33,814; Reg. No. 28,488; Richard J. Anderson, Reg. No. 36,732; H. Sanders Gwin, Jr., Reg. No. 33,242; Stephen R. Schaefer, Reg. No. 37,927; Ronald C. Lundquist, Ph.D., Reg. No. 37,875; John A. Dragseth, Reg. No. 42,497; J. Patrick Finn III, Ph.D., Reg. No. 44,109; M. Angela Parsons, Ph.D., Reg. No. 44,282; Monica McCormick Graham, Ph.D., Reg. No. 42,600; J. Richard Soderberg, Reg. No. 43,352; Chad A. Hanson, Ph.D., Reg. No. 44,737; Greg H. Gardella, Reg. No. 46,045; Teresa A. Lavoie, Ph.D., Reg. No. 42,782; Elizabeth N. Kaytor, Ph.D., Reg. No. 53,103, all of FISH & RICHARDSON P.C., P.A., 60 South Sixth Street, Suite 3300, Minneapolis, MN 55402.

with full power of substitution and revocation, to prosecute the application and to transact all business in the United States Patent and Trademark Office connected therewith.

All correspondence regarding the application should be sent to:

**PTO Customer Number: 26191**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

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Applicant : Michael A. Apicella et al.  
Serial No. : 09/077,572  
Filed : June 1, 1998  
Page : 3 of 3

Attorney's Docket No.: 17023-002051-003-2004

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Respectfully submitted,

FOUNDATION

UNIVERSITY OF IOWA RESEARCH

Date: 6/4/04

W. Bruce Wheaton  
W. Bruce Wheaton  
Title: Executive Director

REGENTS OF THE UNIVERSITY OF  
CALIFORNIA

Date: \_\_\_\_\_

John Shih  
John Shih  
Licensing Officer

WYETH HOLDINGS CORPORATION

Date: \_\_\_\_\_

Gail S. Matthews  
Gail S. Matthews  
Title:

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JUN 09 2004

Attorney's Docket No.: 17023-002US17N5-50

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Michael A. Apicella et al.      Art Unit : 1645  
Serial No. : 09/077,572      Examiner : S. Devi, Ph.D.  
Filed : June 1, 1998  
Title : NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

REVOCATION AND NEW POWER OF ATTORNEY

Under 37 CFR §3.73(b) UNIVERSITY OF IOWA RESEARCH FOUNDATION, a university, THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a university, and WYETH HOLDINGS CORPORATION, a corporation, certify that they collectively are the assignees of 100% of the right, title and interest in the patent application identified above by virtue of: An assignment from the inventors of the patent application identified above.

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Typed or Printed Name of Person Signing Certificate

Applicant : Michael A. Apicella et al.  
Serial No. : 09/077,572  
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Page : 2 of 3

Attorney's Docket No.: 17023-002US1 / N5-50

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States

Applicant : Michael A. Apicella et al.  
Serial No. : 09/077,572  
Filed : June 1, 1998  
Page : 3 of 3

Attorney's Docket No.: 17023-002US1 / N5-50

Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Respectfully submitted,


UNIVERSITY OF IOWA RESEARCH  
FOUNDATION

Date: \_\_\_\_\_

\_\_\_\_\_  
Brenda Atkins  
Associate Director

REGENTS OF THE UNIVERSITY OF  
CALIFORNIA

Date: 6 03 04

  
\_\_\_\_\_  
John Shih  
Licensing Officer

WYETH HOLDINGS CORPORATION

Date: \_\_\_\_\_

\_\_\_\_\_  
Gail S. Matthews  
Title:

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Attorney's Docket No.: 17023-002US1 / N5-50

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Applicant : Michael A. Apicella et al.      Art Unit : 1645  
Serial No. : 09/077,572      Examiner : S. Devi, Ph.D.  
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June 9, 2004  
Date of Deposit

Jill Huso  
Signature

Jill Huso  
Typed or Printed Name of Person Signing Certificate



Applicant : Michael A. Apicella et al.  
Serial No. : 09/077,572  
Filed : June 1, 1998  
Page : 2 of 3

Attorney's Docket No.: 17023-002US1 / N5-50

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Applicant : Michael A. Apicella et al.  
Serial No. : 09/077,572  
Filed : June 1, 1998  
Page : 3 of 3

Attorney's Docket No.: 17023-002US1/IN5-56

Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Respectfully submitted,

UNIVERSITY OF IOWA RESEARCH  
FOUNDATION

Date: \_\_\_\_\_

\_\_\_\_\_  
Brenda Atkins  
Associate Director

REGENTS OF THE UNIVERSITY OF  
CALIFORNIA

Date: \_\_\_\_\_

\_\_\_\_\_  
John Shih  
Licensing Officer

Date: 6/8/04 \_\_\_\_\_

WYETH HOLDINGS CORPORATION

\_\_\_\_\_  
Gale F. Matthews  
Title: Assistant General Counsel

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Y7S.0010J C  
UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SEPTEMBER 13, 1999

PTAS

SCHWEGMAN, LUNDBERG, WOESSNER  
& KLUTH, P.A.  
ANN S. VIKSNINS  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402



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NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 07/12/1999

REEL/FRAME: 010083/0800  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:  
GIBSON, BRADFORD W.

DOC DATE: 09/17/1998

ASSIGNEE:  
REGENTS OF THE UNIVERSITY OF  
CALIFORNIA, THE  
1111 FRANKLIN STREET  
FIFTH FLOOR  
OAKLAND, CALIFORNIA 94607-5200SERIAL NUMBER: 09077572  
PATENT NUMBER:FILING DATE: 10/13/1998  
ISSUE DATE:KIMBERLY WHITE, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDSSchwegman, Lundberg,  
Woessner & Kluth, P.A.

SEP 20 1999

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01-10-96:CMGRECORDATION FORM CC  
PATENTS ONI

07-14-1999

COMMERCE  
Trademark Office

Atty Ref/Docket No.: 875.001US2



101088203

To the Honorable Commissioner of Patents and Trademarks: Please record the attached origi.

1. Name of conveying party(ies):

Bradford W. Gibson

Additional name(s) of conveying party(ies) attached? [ ] Yes [X] No

3. Nature of conveyance:

[X] Assignment [ ] Merger  
[ ] Security Agreement [ ] Change of Name  
[ ] Other

Execution Date: September 17, 1999

2. Name and address of receiving party(ies):

Name: The Regents of the University of California

Street Address: 1111 Franklin Street  
Fifth Floor

City: Oakland State: CA ZIP: 94607-5200

Additional name(s) &amp; address(es) attached? [ ] Yes [X] No

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4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s)

B. Patent No.(s)

Serial No. 09/077,572, filed October 13, 1998

Additional numbers attached? [ ] Yes [X] No

5. Name and address of party to whom correspondence  
concerning document should be mailed:

Name: Ann S. Viksnins

Address: Schwegman, Lundberg, Woessner & Kluth, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$ 40.00 E

[X] Enclosed  
[ ] Authorized to be charged to deposit account

8. Please charge any additional fees or credit any overpayments to our  
Deposit account number: 19-0743

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Ann S. Viksnins/Reg. No. 37.748  
Name of Person Signing

Signature

Date

Total number of pages including cover sheet: 3

OMB No. 0651-0011 (exp. 4/94)

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Washington, D.C. 20231

Public burden reporting for this sample cover sheet is estimated to average about 30 minutes per document to be recorded, including time for reviewing the document and gathering the data needed, and completing and reviewing the sample cover sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Office of information systems, PK2-1000C, Washington, D.C. 20231, and to the Office of Management and Budget, Paperwork Reduction Project (0651-0011), Washington, D.C. 20503.

JUN 09 2004

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## ASSIGNMENT

WHEREAS, I, Bradford W. Gibson, residing at 1324 Peralta Avenue, Berkeley, CA 94702, made certain new and useful inventions and improvements for which I, together with Michael A. Apicella, Melvin G. Sunshine, Na-Gyong Lee and Rasappa Arumugham filed an application for Letters Patent of the United States on June 1, 1998, which application was assigned U.S. patent application serial number 09/077,572, and is entitled NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA.

AND WHEREAS, The Regents of the University of California, a corporation organized and existing under and by virtue of the laws of the State of California, and having an office and place of business at 1111 Franklin Street, Fifth Floor, Oakland, California 94607-5200, (hereinafter "Assignee") is desirous of acquiring the entire right, title and interest in and to said inventions, improvements and application and in and to the Letters Patent to be obtained therefor;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, I have sold, assigned, and transferred, and by these presents do sell, assign and transfer unto said Assignee, its successors or assigns, the entire right, title and interest for all countries in and to all inventions and improvements disclosed in the aforesaid application, and in and to the said application, all divisions, continuations, or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extensions of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said inventions and improvements, including an assignment of all rights under the provisions of the International Convention, and all Letters Patent of foreign countries which may be granted therefrom; and I do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent for the aforesaid inventions and improvements to the said Assignee as the assignee of the entire right, title and interest in and to the same, for the use of the said Assignee, its successors and assigns.

JUN 09 2004

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Docket No.: 875.001US2  
 Serial No.: 09/077,572  
 Filing Date: June 1, 1998  
 Page 2 of 4

AND, for the consideration aforesaid, I do hereby agree that me and my executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

AND, furthermore I covenant and agree with said Assignee, its successors and assigns, that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me/us and that full right to convey the same as herein expressed is possessed by us.

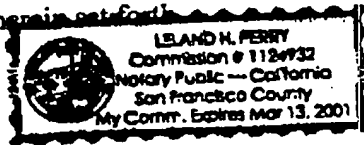
IN TESTIMONY WHEREOF, I have hereunto set my hand this 17<sup>th</sup> day of September, 1998.

Bradford W. Gibson  
 Bradford W. Gibson

STATE OF CALIFORNIA  
 City and County of SAN FRANCISCO ) ss.

On this 17<sup>th</sup> day of SEPTEMBER, 1998 before me personally appeared Bradford W. Gibson  
 Or proved to me on the basis of satisfactory evidence,  
 to me known and known to me to be the person described in and who executed the foregoing  
 instrument, and he/~~she~~ duly acknowledged to me that he/~~she~~ executed the same for the uses and  
 purposes therein set forth.

[SEAL]



X [Signature]  
 Notary Public

JUN 09 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OFFICIAL

Applicant: Michael A. Apicella et al.

Title: NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA

Docket No.: 875.001US2

Filed: October 13, 1998

Examiner: S. Devi

Serial No.: 09/077,572

Due Date: N/A

Group Art Unit: 1641

Attn: Box Assignment  
Hon. Commissioner for Patents and Trademarks  
Washington, D.C. 20231

We are transmitting herewith the attached:

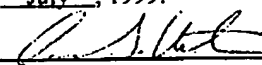
- ☒ An Assignment of the invention to The Regents of the University of California (2 pgs.) and Recordation Form Cover Sheet (1 pg.).
- ☒ A check in the amount of \$40.00 to cover the Assignment Recording Fee.
- ☒ A return postcard.

Other: \_\_\_\_

Please charge any additional required fees or credit overpayment to Deposit Account No. 19-0743.

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described above, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Attn: Box Assignment, Hon. Commissioner for Patents and Trademarks, Washington, D.C. 20231, on this 14 day of July, 1999.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938, Minneapolis, MN 55402 (612-373-6900)

By:   
Name: Ann S. Viksnins  
Reg. No. 37,748  
ASV:CMG:af



87-007052  
UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SEPTEMBER 13, 1999

PTAS

SCHWEGMAN, LUNDBERG, WOESSNER  
& KLUTH, P.A.  
ANN S. VIKSNINS  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402



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RECORDATION DATE: 07/12/1999

REEL/FRAME: 010083/0818  
NUMBER OF PAGES: 6

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

## ASSIGNOR:

APICELLA, MICHAEL

DOC DATE: 07/30/1998

## ASSIGNOR:

SUNSHINE, MELVINE G.

DOC DATE: 07/30/1998

## ASSIGNOR:

LEE, NA-GYONG

DOC DATE: 08/11/1998

## ASSIGNEE:

UNIVERSITY OF IOWA RESEARCH  
FOUNDATION  
100 OAKDALE CAMPUS, #214 TIC  
IOWA CITY, LOUISIANA 52242-5000

SERIAL NUMBER: 09077572  
PATENT NUMBER:

FILING DATE: 10/13/1998  
ISSUE DATE:

Schwegman, Lundberg,  
Woessner & Kluth P.A.

SEP 20 1999

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010083/0818 PAGE 2

KIMBERLY WHITE, EXAMINER  
ASSIGNMENT DIVISION  
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FORM PTO-1584

01-10-96 CMG

07-14-1999

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Atty Ref/Docket No.: 875.001US2



101088204

To the Honorable Commissioner of Patents and Trade

Original documents or copy thereof.

1. Name of conveying party(ies):

Michael A. Apicella, Melvin G. Sunshine, Na-Gyong Lee

2. Name and address of receiving party(ies):

Name: University of Iowa Research Foundation

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Additional name(s) of conveying party(ies) attached? [ ] Yes [X] No

3. Nature of conveyance:

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☐ OtherStreet Address: 100 Oakdale Campus  
#214 TIC

City: Iowa City State: IA ZIP: 52242-5000

Execution Date: July 30, 1999, July 30, 1999, August 11, 1999

Additional name(s) &amp; address(es) attached? [ ] Yes [X] No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)

B. Patent No.(s)

Serial No. 09/077,572, filed October 13, 1998

Additional numbers attached? [ ] Yes [X] No

5. Name and address of party to whom correspondence  
concerning document should be mailed:

Name: Ann S. Viksnins

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$ 40.00 E

☒ Enclosed☐ Authorized to be charged to deposit account8. Please charge any additional fees or credits any overpayments to our  
Deposit account number: 19-0743Address: Schwegman, Lundberg, Woessner & Kluth, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Ann S. Viksnins/Reg. No. 37,748

Name of Person Signing

Signature

Date

7 Jan 1999  
Total number of pages including cover sheet: 6

OMB No. 0651-0011 (exp. 4/94)

7/13/1999 DNGUYEN 00000359 09077572

1 FC:581

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Washington, D.C. 20231

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## ASSIGNMENT

WHEREAS, WE, Michael A. Apicella, residing at 2646 Johnsons Crossing, N.E., Solon, IA 52333, and Melvin G. Sunshine, residing at 340 Raven Street, Iowa City, IA 52245, Administration, and Na-Gyong Lee, residing at Apartment 27-1309, Nam-gu Hakik-2-dong, Sindong-a, Incheon, Korea, made certain new and useful inventions and improvements for which We, together with Rasappa Arumugham and Bradford W. Gibson, filed an application for Letters Patent of the United States on June 1, 1998, which application was assigned U.S. patent application serial number 09/077,572, and is entitled NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA.

AND WHEREAS, UNIVERSITY OF IOWA RESEARCH FOUNDATION, a corporation organized and existing under and by virtue of the laws of the State of Iowa, and having an office and place of business at 100 Oakdale Campus, #214 TIC, Iowa City, Iowa 52242-5000, (hereinafter "Assignee") is desirous of acquiring the entire right, title and interest in and to said inventions, improvements and application and in and to the Letters Patent to be obtained therefor;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, we have sold, assigned, and transferred, and by these presents do sell, assign and transfer unto said Assignee, its successors or assigns, the entire right, title and interest for all countries in and to all inventions and improvements disclosed in the aforesaid application, and in and to the said application, all divisions, continuations, or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extensions of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said inventions and improvements, including an assignment of all rights under the provisions of the International Convention, and all Letters Patent of foreign countries which may be granted therefrom; and we do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent for the aforesaid inventions and improvements to the said Assignee as the assignee of the entire right, title and interest in and to the same, for the use of the said Assignee, its successors and assigns.

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Docket No.: 875.001US2  
Serial No.: 09/077,572  
Filing Date: June 1, 1998  
Page 2 of 4

AND, for the consideration aforesaid, we do hereby agree that we and our executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

AND, furthermore we covenant and agree with said Assignee, its successors and assigns, that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me/us and that full right to convey the same as herein expressed is possessed by us.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 30 day of July, 1998.

Michael A. Apicella

STATE OF Iowa )  
 )ss.  
COUNTY OF Johnson )

On this 30 day of July, 1998 before me personally appeared Michael A. Apicella  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he/she duly acknowledged to me that he/she executed the same for the uses and  
purposes therein set forth.

[SEAL]

**Notary Public**

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**Docket No.: 875.001US2**  
**Serial No.: 09/077,572**  
**Filing Date: June 1, 1998**  
**Page 3 of 4**

IN TESTIMONY WHEREOF, I have hereunto set my hand this 30 day of July, 1998.

Melvin G. Sunshine  
Melvin G. Sunshine

STATE OF Texas )  
 )ss.  
COUNTY OF Johnson )

On this 30 day of July, 1998 before me personally appeared Melvin G. Sunshine  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he/she duly acknowledged to me that he/she executed the same for the uses and  
purposes therein set forth.

[SEAL]

Barbara K. Spencer  
Notary Public

IN TESTIMONY WHEREOF, I have hereunto set my hand this 11 day of August, 1998.

Na-Gyong Lee  
Na-Gyong Lee

STATE OF Republic of Korea  
COUNTY OF Incheon City

On this 11 day of August, 1998 before me personally appeared Na-Gyong Lee to me known and known to me to be the person described in and who executed the foregoing instrument, and he/she duly acknowledged to me that he/she executed the same for the uses and purposes therein set forth.

[SEAL]

We churuthan  
Notary Public

경기도 수원시 팔달구 원천동 83-23  
승전빌딩 4층

[제42호 서식]

공증 동수원종합법무법인  
인가  
THE EAST SUWON LAW CORPORATION

대표전화: 211-1411~3  
F A X: 211-7073

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19 98 년 등부 제 4090 호 Registered No.1998 - 4090

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인 증

NOTARIAL CERTIFICATE OFFICIAL

위 양 도 서 \_\_\_\_\_

NA-GYOUNG LEE.

에 기재된 이 나 경 \_\_\_\_\_

personally appeared before  
me and admitted his(her)  
subscription to the attached.

ASSIGNMENT.

본직의 면전에서 위 사서증서에  
자기가 기명날인 한 것임을 자인하였다.

19 98 년 8 월 11 일

This is hereby attested on this 11TH day  
of AUGUST 1998 at this office.

이 법인 사무소에서

위 인증한다.

공증 동수원종합법무법인  
인가

경기도 수원시 팔달구 원천동 83-23

THE EAST SUWON LAW CORPORATION  
83-23, Wonchun-dong, Pal dal-Ku,  
Suwon city, Kyunggi-do, Korea

담당변호사

Attorney at Law acting as Notary Public

위 철 환

CHURL WHAN WE

본 법인은 법률 제3790호에 의거하여  
법무부 장관으로부터 공증인 업무를 행  
할 것을 허가받았다.

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Minister of Justice, the Republic of Korea,  
to act as Notary Public in accordance  
with Law No.3790.

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Applicant: Michael A. Apicella et al.

Title: NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA

Docket No.: 875.001US2

Filed: October 13, 1998

Examiner: S. Devi

Serial No.: 09/077,572

Due Date: N/A

Group Art Unit: 1641

Attn: Box Assignment  
Hon. Commissioner for Patents and Trademarks  
Washington, D.C. 20231

We are transmitting herewith the attached:

- ☒ An Assignment of the invention to University of Iowa Research Foundation (5 pgs.) and Recordation Form Cover Sheet (1 pg.).
- ☒ A check in the amount of \$40.00 to cover the Assignment Recording Fee.
- ☒ A return postcard.
- Other: \_\_\_\_.

Please charge any additional required fees or credit overpayment to Deposit Account No. 19-0743.

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described above, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Attn: Box Assignment, Hon. Commissioner for Patents and Trademarks, Washington, D.C. 20231, on this 7th day of July, 1999.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH P.A.  
P.O. Box 2938, Minneapolis, MN 55402 (612-373-6900)

By: [Signature]  
Name: Ann S. Viksnins  
Reg. No. 37,748  
ASV:CMG:af



15.001032  
UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
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Washington, D.C. 20231

SEPTEMBER 14, 1999

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ANN S. VIKSNINS  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402



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RECORDATION DATE: 07/12/1999

REEL/FRAME: 010088/0026  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

## ASSIGNOR:

ARUMUGHAM, RASAPPA

DOC DATE: 07/31/1998

## ASSIGNEE:

AMERICAN CYANAMID COMPANY  
FIVE GIRALDA FARMS  
MADISON, NEW JERSEY 07940

SERIAL NUMBER: 09077572

FILING DATE: 10/13/1998

PATENT NUMBER:

ISSUE DATE:

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ASSIGNMENT DIVISION  
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Schwegman, Lundberg  
Woessner & Smith PA

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RECOR

09-14-1999

DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Atty Ref/Docket No.: 875.001US2



101125996

To the Honorable Commissioner of Patents and Trademarks: Please

1. Name of conveying party(ies):

Rasappa Arumugham

2. Name and address of receiving party(ies):

Name: American Cyanamid Company

Additional name(s) of conveying party(ies) attached? ( ) Yes [X] No

3. Nature of conveyance:

[X] Assignment

[ ] Merger

[ ] Security Agreement

[ ] Change of Name

[ ] Other

Street Address: Five Giralda Farms

City: Madison State: NJ ZIP: 07940

Execution Date: July 31, 1999-1998

Additional name(s) &amp; address(es) attached? ( ) Yes [X] No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s)

B. Patent No.(s)

Serial No. 09/077,572, filed October 13, 1998

Additional numbers attached? ( ) Yes [X] No

5. Name and address of party to whom correspondence  
concerning document should be mailed:

Name: Ann S. Viksnins

Address: Schwegman, Lundberg, Woessner & Kluth, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$ 40.00

[X] Enclosed

[ ] Authorized to be charged to deposit account

8. Please charge any additional fees or credit any overpayments to our  
Deposit account number: 19-0743

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Ann S. Viksnins/Reg. No. 37,748

Name of Person Signing

Signature

Date

Total number of pages including cover sheet: 3

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**ASSIGNMENT**

WHEREAS, I, Rasappa Arumugham, residing at 15 Elatia Circle, Pittsford, NY 14534, made certain new and useful inventions and improvements for which I, together with Michael A. Apicella, Melvin G. Sunshine, Na-Gyong Lee and Bradford W. Gibson filed an application for Letters Patent of the United States on June 1, 1998, which application was assigned U.S. patent application serial number 09/077,572, and is entitled NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA.

AND WHEREAS, American Cyanamid Company, a corporation organized and existing under and by virtue of the laws of the State of Maine, and having an office and place of business at Five Giralda Farms, Madison, NJ 07940, (hereinafter "Assignee") is desirous of acquiring the entire right, title and interest in and to said inventions, improvements and application and in and to the Letters Patent to be obtained therefor;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, I have sold, assigned, and transferred, and by these presents do sell, assign and transfer unto said Assignee, its successors or assigns, the entire right, title and interest for all countries in and to all inventions and improvements disclosed in the aforesaid application, and in and to the said application, all divisions, continuations, or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extensions of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said inventions and improvements, including an assignment of all rights under the provisions of the International Convention, and all Letters Patent of foreign countries which may be granted therefrom; and I do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent for the aforesaid inventions and improvements to the said Assignee as the assignee of the entire right, title and interest in and to the same, for the use of the said Assignee, its successors and assigns.

Docket No.: 875.001US2  
Serial No.: 09/077,572  
Filing Date: June 1, 1998  
Page 2 of 4

AND, for the consideration aforesaid, I do hereby agree that I and my executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

AND, furthermore I covenant and agree with said Assignee, its successors and assigns, that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me/us and that full right to convey the same as herein expressed is possessed by me.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 31<sup>st</sup> day of July, 1998.

Rasappa Arumugham  
Rasappa Arumugham

STATE OF New York  
COUNTY OF Monroe

On this 31 day of July, 1998 before me personally appeared Rasappa Arumugham to me known and known to me to be the person described in and who executed the foregoing instrument, and he/she duly acknowledged to me that he/she executed the same for the uses and purposes therein set forth.

[SEAL]

KAREN M. COLEMAN  
Notary Public, State of New York  
Qualified in Monroe County  
Commission Expires April 19, 2000

Karen M. Coleman  
Notary Public

OPR/ASSIGNMENTS

6/2/04 8:12 PAGE 2/4 RightFAX



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Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231



\*700088182A\*

JUNE 02, 2004

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60 SOUTH SIXTH STREET  
SUITE 3300  
MINNEAPOLIS, MN 55402

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RECORDATION DATE: 05/28/2004

REEL/FRAME: 014677/0895  
NUMBER OF PAGES: 2

BRIEF: CHANGE OF NAME (SEE DOCUMENT FOR DETAILS)..  
DOCKET NUMBER: 17023002US1

ASSIGNOR:  
AMERICAN CYANAMID COMPANY

DOC DATE: 12/31/2002

ASSIGNEE:  
WYETH HOLDINGS CORPORATION  
FIVE GIRALDA FARMS  
MADISON, NEW JERSEY 07940

SERIAL NUMBER: 09077572

FILING DATE: 10/13/1998

PATENT NUMBER:

ISSUE DATE:

TITLE: NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA

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6/2/04 8:12 PAGE 3/4 RightFAX

014677/0895 PAGE 2

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ASSIGNMENT DIVISION  
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FISH &amp; RICHARDSON PC PA

002

05/28/2004  
700088182

Substitute Form PTO-1585  
 Attorney Docket No.: 17023-002US1  
 Client's Ref. No.: N5-50

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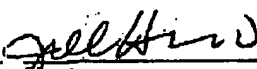
Commissioner for Patents: Please record the attached original document(s) or copy(ies).	
<b>1. Name of conveying party(ies):</b> American Cyanamid Company Additional name(s) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>2. Name and address of receiving party(ies):</b> Wyeth Holdings Corporation Five Giralda Farms Madison, New Jersey 07940  Additional names/addresses attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>3. Nature of conveyance:</b> <input type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input checked="" type="checkbox"/> Change of Name <input type="checkbox"/> Other:  Execution Date: 12/31/2002	
<b>4. Application number(s) or patent number(s):</b> If this document is being filed with a new application, the execution date of the application is: A. Patent Application No(s): 09/077,572 B. Patent No(s):  Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>5. Name/address of party to whom correspondence concerning document should be mailed:</b>  ANN S. VIKSNINS Fish & Richardson P.C., P.A. 60 South Sixth Street Suite 3300 Minneapolis, MN 55402	<b>6. Total number of applications/patents involved: 1</b>  <b>7. Total fee (37 CFR §3.41): \$40</b> <input type="checkbox"/> Enclosed <input checked="" type="checkbox"/> Authorized to charge Deposit Account.  <b>8. Deposit Account No.: 08-1050</b> Please apply any additional charges, or any credits, to our Deposit Account No. 08-1050.
<b>DO NOT USE THIS SPACE</b>	
<b>9. Statement and Signature: To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">           Ann S. Viksnins            Reg. No. 37,748            Name of Person Signing         </div> <div style="width: 30%; text-align: center;">             Signature         </div> <div style="width: 30%; text-align: center;">           28 May 2004            Date         </div> </div>	
Total number of pages including coversheet, attachments and document: 3	

60220340.doc

### CERTIFICATE OF TRANSMISSION BY FACSIMILE

I hereby certify that this correspondence is being transmitted by facsimile to the Patent and Trademark Office on the date indicated below.

May 28, 2004  
 Date of Transmission

  
 Signature

Jill Huxo  
 Typed Name of Person Signing Certificate

CH \$40.00 061050 09077572

## State of Maine



## Department of the Secretary of State

*I, the Secretary of State of Maine, certify that according to the provisions of the Constitution and Laws of the State of Maine, the Department of the Secretary of State is the legal custodian of the Great Seal of the State of Maine which is hereunto affixed and of the records of organization, amendment, and dissolution of corporations and annual reports filed by the same.*

*I further certify that WYETH HOLDINGS CORPORATION, formerly AMERICAN CYANAMID COMPANY is a duly organized business corporation under the laws of the State of Maine and that the date of incorporation is July 23, 1907.*

*I further certify that an amendment to change the legal name from AMERICAN CYANAMID COMPANY to WYETH HOLDINGS CORPORATION was filed on December 31, 2002.*

*I further certify that said business corporation has filed annual reports due to this Department, and that no action is now pending by or on behalf of the State of Maine to forfeit the charter and that according to the records in the Department of the Secretary of State, said corporation is a legally existing business corporation in good standing under the laws of the State of Maine at the present time.*

*In Testimony Whereof, I have caused the Great Seal of the State of Maine to be hereunto affixed. Given under my hand at Augusta, Maine, February 3, 2004.*



A handwritten signature in black ink, appearing to read "Dan Gwadosky".

DAN GWADOSKY  
SECRETARY OF STATE